

Claims

What is claimed is:

1. An assembly for processing wood chips, comprising:
a drum disposed so as to rotate about a generally horizontal axis and
5 spinning at a rate of about 50 rpm or more, said drum including a plurality of
outwardly extending blades; and
wherein output from said drum, when an input stream of wood chips is fed to
said drum, covers an arc of at least 90° when viewed from a position along
said horizontal axis spaced from said drum.
- 10 2. The assembly of claim 1 wherein said drum spins at 150 rpm or more.
3. The assembly of claim 1 wherein said blades comprise a leading face with at
least a first face section that extends in a first direction and at least a second face
section extending at a forward angle relative to said first section.
4. The assembly of claim 1 wherein said arc is generally downwardly facing.
- 15 5. The assembly of claim 1 wherein said drum has a core surface with a non-
circular cross-section.
6. The assembly of claim 1 further comprising a motor operatively connected to
said drum and supplying rotational power thereto.
7. The assembly of claim 1 further comprising a feed chute disposed upstream
20 from said drum and supplying said input stream of wood chips to said drum.

8. The assembly of claim 7 wherein said feed chute comprises a baseplate and a plurality of divider walls moveably mounted to said baseplate, wherein said divider walls control the relative flow ratios of said input stream to a first side portion, a center portion, and a second side portion of said drum.

5 9. The assembly of claim 1 further comprising a container for receiving said output.

10. The assembly of claim 1 further comprising a feed chute disposed upstream from said drum and supplying said input stream of wood chips to said drum, a motor operatively connected to said drum and supplying rotational power thereto, wherein:

10 said blades comprise a leading face with at least a first face section that extends in a first direction and at least a second face section extending at a forward angle relative to said first section;

said feed chute comprises a baseplate and a plurality of divider walls moveably mounted to said baseplate, wherein said divider walls control the

15 relative flow ratios of said input stream to a first side portion, a center portion, and a second side portion of said drum; and

said drum spins at 150 rpm or more.

11. An assembly for processing wood chips, comprising:

a drum disposed so as to rotate about a generally horizontal axis and spinning at a rate of about 50 rpm or more, said drum including a plurality of outwardly extending blades;

5 wherein an output stream of wood chips from said drum covers an arc of more than 90° when viewed from a position along said horizontal axis spaced from said drum when an input stream of wood chips is fed to said drum; and

10 said output stream causing a pile of wood chips to be formed a packing density factor of at least 1.20.

12. The assembly of claim 11 wherein said drum spins at 150 rpm or more.

13. The assembly of claim 11 said blades comprise a leading face with at least a first face section that extends in a first direction and at least a second face section extending at a forward angle relative to said first section.

15 14. The assembly of claim 11 wherein said arc is generally downwardly facing.

15. The assembly of claim 11 further comprising a motor operatively connected to said drum and supplying rotational power thereto.

16. The assembly of claim 11 further comprising a feed chute disposed upstream from said drum and supplying said input stream of wood chips to said drum.

17. The assembly of claim 16 wherein said feed chute comprises a baseplate and a plurality of divider walls moveably mounted to said baseplate, wherein said divider walls control the relative flow ratios of said input stream to a first side portion, a center portion, and a second side portion of said drum.

5 18. The assembly of claim 11 further comprising a container for receiving said output.

19. The assembly of claim 11 wherein said packing density factor is at least 1.25.

20. The assembly of claim 11 further comprising a feed chute disposed upstream from said drum and supplying said input stream of wood chips to said drum, a motor

10 operatively connected to said drum and supplying rotational power thereto, wherein:

said blades comprise a leading face with at least a first face section that extends in a first direction and at least a second face section extending at a forward angle relative to said first section;

said feed chute comprises a baseplate and a plurality of divider walls

15 moveably mounted to said baseplate, wherein said divider walls control the relative flow ratios of said input stream to a first side portion, a center portion, and a second side portion of said drum; and

said drum spins at 150 rpm or more.

21. An assembly for processing wood chips, comprising:

a drum disposed so as to rotate about a generally horizontal axis and
spinning at a rate of about 50 rpm or more, said drum including a plurality of
outwardly extending blades; and

5 said blades comprising a leading face with at least a first face section that
extends in a first direction and at least a second face section extending at a
forward angle relative to said first section.

22. The assembly of claim 21 said blades wherein said first and second sections
are generally planar.

10 23. The assembly of claim 21 wherein said first section extends outwardly away
from a core of said drum.

24. The assembly of claim 21 wherein said first direction is generally radial with
respect to said axis.

25. The assembly of claim 21 wherein said drum spins at 150 rpm or more.

15 26. The assembly of claim 21 further comprising a feed chute disposed upstream
from said drum and supplying said input stream of wood chips to said drum.

27. The assembly of claim 26 wherein said feed chute comprises a baseplate and a
plurality of divider walls moveably mounted to said baseplate, wherein said divider walls
control the relative flow ratios of said input stream to a first side portion, a center
20 portion, and a second side portion of said drum.

28. The assembly of claim 21 further comprising a container for receiving said output.

29. The assembly of claim 28 wherein said container is selected from the group consisting of a train car, a ship, a barge, a trailer, a storage bin, and a digestion
5 chamber.

30. The assembly of claim 21 wherein said forward angle is in the range of 25° to 45°.

31. A method of handling wood chips, comprising:

rotating a drum having a plurality of outwardly extending blades under power
about a generally horizontal axis at a rate of 50 rpm or more;

feeding a stream of incoming wood chips to said drum while rotating said
5 drum; and

flinging wood chips by said drum to form an output stream of wood chips
covering an arc of at least 90° when viewed from a position along said
horizontal axis spaced from said drum.

32. The method of claim 31 wherein said arc is between 90° and 120°.

10 33. The method of claim 32 further comprising said output stream forming an
output pile of wood chips having a packing density factor of at least 1.20.

34. The method of claim 31 wherein forming an output pile of wood chips having a
packing density factor of at least 1.20 comprises forming an output pile of wood chips
having a packing density factor of at least 1.25.

15 35. The method of claim 33 wherein forming an output pile of wood chips having a
packing density factor of at least 1.20 comprises forming an output pile of wood chips in
a container having a packing density factor of at least 1.20.

36. The method of claim 35 wherein said container is selected from the group
consisting of a train car, a ship, a barge, a trailer, a storage bin, and a digestion
20 chamber.

37. The method of claim 31 further comprising impacting a substantial portion of said wood chips against said blades, said blades comprising a leading face with at least a first face section that extends in a first direction and at least a second face section extending at a forward angle relative to said first section.

5 38. The method of claim 31 wherein rotating said drum a rate of 50 rpm or more comprises rotating said drum at a rate of 150 rpm or more.

39. The method of claim 31 wherein feeding said stream of incoming wood chips to said drum while rotating said drum comprises controlling the relative flow ratios of said input stream to a first side portion, a center portion, and a second side portion of said
10 drum via a feed chute that comprises a baseplate and a plurality of divider walls moveably mounted to said baseplate.